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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/729,531

12/05/2003

Yaping Zhou

SC12717TK

1912

23125

7590

10/18/2005

FREESCALE SEMICONDUCTOR, INC.
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AUSTIN, TX 78729

EXAMINER

MAI, ANH T

ART UNIT

PAPER NUMBER

2832

DATE MAILED: 10/18/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/729,531	Applicant(s) ZHOU ET AL.	
	Examiner Anh T. Mai	Art Unit 2832	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 8/12/05.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7 and 9-23 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-7, 9-15 and 18-23 is/are allowed.
- 6) ☒ Claim(s) 16 and 17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 16-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Marshall et al. 2003/0031339A1] in view of Olschewski and further in view of Cheon.

Marshall discloses a core 12 electrically coupled to substrate 16 at ends 18,20; the substrate is part of IC die 14 whereon the core being located [figures 4a-b].

Marshall discloses the claimed invention except for the coil comprising segments formed from a first plurality of bond wires and a second plurality of bond wires, the first plurality of bond wires extending between the core and the substrate, each of the first plurality of bond wires coupled to two of a plurality of wire bond pads, and the second plurality of bond wires extending over the core and coupled between two of the plurality of wire bond pads.

Olschewski , however, discloses a toroidal ferrite core 18 coupled to a substrate 10 and conductive coil surrounding the core; the coil comprising segments formed from a first plurality of bond wires 24 and a second plurality of bond wires 12 extending between the core and the substrate [see figure 1].

Because Marshall and Olschewski are both from the same field of endeavor, the winding of a coil structure as disclosed by Olschewski would have been recognized as an art pertinent art of Marshall.

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It would have been obvious, therefore, at the time the invention was made to a person having skill in the art to construct the coil structure, such as the one disclosed by Olschewski with packaging and RF shielding for coils, such as disclosed by Marshall for the purpose of utilize miniature transformer in integrated circuit environment.

Marshall in view of Olschewski discloses the invention as claimed as cited above except for each of the first plurality of bond wires coupled two of plurality of wire bond pads, and second bond wires extending over the core and coupled between two of the wire bond pads.

Cheon however, discloses bond pads 122, 124, 126 [figures 1-2].

Each pair of pads has an corresponding bonding wire connected between the pads constituting the pair, and metal lines on the substrate connect a pad from each pair of pads to a pad in the next pair so that the pairs of pads, the metal lines, and the bonding wires form a current path.

Because Marshall, Olschewski, and Cheon are from the same field of endeavor, the bond pads as disclosed by Cheon would have been recognized as an art pertinent art of Marshall in view of Olschewski.

It would have been obvious, therefore, at the time the invention was made to a person having skill in the art to connect the coil ends structure, such as the one disclosed by Cheon with coil structure, such as disclosed by Marshall in view of Olschewski for the purpose of reducing the contact area with chips due to low resistance of bonding wire [abstract].

Allowable Subject Matter

3. Claims 1-7,9-15,18-23 are allowed.

Claims 1 and 18 recite, inter alia, *the core is coupled to the substrate using epoxy, the first plurality of bond wires extending through the epoxy.*

The references of record do not teach or suggest the aforementioned limitation, nor would it be obvious to modify those references to include such limitation.

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Response to Arguments

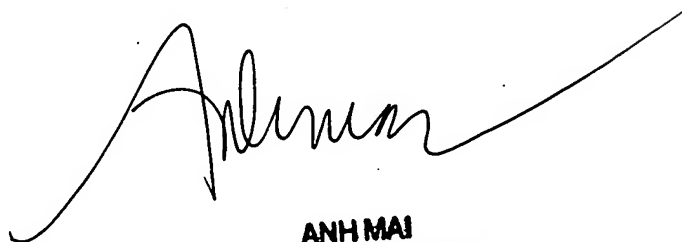
4. Applicant's arguments with respect to claims of record have been considered but are moot in view of the new ground(s) of rejection.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anh T. Mai whose telephone number is 571-272-1995. The examiner can normally be reached on 5/4/9 Schedule.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Elvin Enad can be reached on 571-272-1990. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

am

A handwritten signature in black ink, appearing to read 'Anh Mai', with a long horizontal flourish extending to the right.

**ANH MAI
PRIMARY EXAMINER**